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Bailey, Charles W., Jr. "Fostering Technical Innovation in Libraries." The Public-Access Computer Systems Review 3, no. 7 (1992): 19-22. To retrieve this article, send the following e-mail message to LISTSERV@UHUPVM1 or LISTSERV@UHUPVM1.UH.EDU: GET BAILEY PRV3N7 F=MAIL.

The 1990s offer libraries significant opportunities for developing innovative computer systems--powerful computer platforms and sophisticated software tools have become affordable, and they continue to drop in price and improve in performance.

How can libraries take advantage of this opportunity? Grant funding offers one way to foster innovation, and, for large-scale projects, it may be essential; however, there are limited opportunities to secure such funding and many small projects may not warrant it. When grant funding is sought, the library's proposal is strengthened if it can demonstrate prior effort and expertise in the proposal area. Every opportunity to secure grant funding should be seized; however, libraries should not limit themselves to this funding option. Here are some brief guidelines for encouraging technical innovation without depending on grant funding.

(1) Cultivate staff technical expertise and encourage interdepartmental cooperation. As computing and networking technologies evolve, the effective application of these technologies in libraries requires a considerable breadth and depth of technical expertise. It is becoming increasingly difficult for a single staff member to master all relevant aspects of these technologies; a team approach is often required.

Typically, libraries have small systems departments that provide a core of technical expertise. Increasingly, staff in other departments are mastering computing tools that have direct relevance to their job duties. These technical experts should be encouraged to broaden and deepen their skills through academic courses, training seminars, and self-study opportunities. As the budget permits, libraries should provide leave time and funding for technical training opportunities, and they should formally recognize the acquisition of technical skills for promotion and tenure purposes.

Libraries should encourage experts in different departments--and at different levels of the organization--to work together on technical projects. Matrix project management can be challenging; however, it can also create productive new bonds between staff that have both short- and long-term benefits.

(2) Provide seed money for pilot projects. [1] Libraries do not need to invest massive amounts of money to make progress; however, they do need to establish a technical innovation fund that staff can tap to create small-scale pilot projects. Although a variety of funding strategies are possible, a straightforward approach would be to allocate a fixed budget for this purpose at the start of the fiscal year and to use it to fund projects that have a predetermined maximum funding ceiling. At this stage, funding a number of small projects is preferable to funding a few very expensive ones.

A simple procedure for requesting funds should be established that encourages administrators to make swift decisions. Librarians should complete a brief proposal form that provides project objectives and benefits, a timetable with a firm completion date, staffing needs, and required hardware and software.

Given budget constraints, not every meritorious project can be funded. The goal is to fund enough proposals to produce a few projects that show significant promise.

(3) Build on success. Some pilot projects will have an immediate payoff; they can used as is without further development effort. Additional money may or may not be required to implement the system. For example, a library may want to install a microcomputer-based reference advisor system at different service desks and public-access clusters throughout the library. If the appropriate hardware and software is in place to support the system, no additional funds will be required to implement it. If not, needed hardware and software will have to be purchased.

Other pilot projects will show promise, but will require additional money, time, and effort to reach fruition. Often this is because the task is more complex than anticipated. If they are not so complicated that they defy solution, complex problems are good problems--the systems that solve these problems are likely to have significant benefits. However, hard problems are usually best approached by a successive approximation strategy: solve one part of the problem at a time, accepting the imperfection of each interim solution, until the whole problem is solved.

(4) Reward effective innovation. The efforts of staff who develop successful systems should be rewarded. If system development activities are recognized when decisions are made about merit pay increases, promotion, and tenure, more staff will be interested in engaging in these activities. Other types of recognition are also effective, including institutional awards and publicity in library publications.

(5) Accept failure. The hunt for the guilty when a project

> fails accomplishes little, but it does make other staff reconsider taking risks in the future. If the resource investment in pilot projects is kept small, little is lost. Often valuable lessons can be learned from failure: dead ends are identified, new avenues of inquiry may be revealed, and parts of the failed system may form the core of a successful, new effort.

With the proper encouragement, staff can develop systems that improve library operations; however, to foster technical innovation, libraries must prudently invest scarce resources and take calculated risks.

References and Notes

1. Jerry Campbell, University Librarian at Duke University, has suggested that libraries allocate three percent of their budgets for research and development. See: Jerry D. Campbell, "Shaking the Conceptual Foundations of Reference: A Perspective," Reference Services Review 20, no. 4 (1992): 29-35.

+ Page 22 +
